

SEQUENCE LISTING

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Sedgwick, Jonathon D.

<120> Mammalian Proteins; Related Reagents and Methods

<130> DX01052K1

<140> 10/009,445

<141> 2000-05-11

<150> PCT/US00/12998

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 Gln Val Leu Val Pro Pro Glu Val Thr His Phe Pro Gly Glu Asn Arg  
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 Thr Ala Val Cys Glu Ala Ile Ala Gly Lys Pro Ala Ala Gln Ile Ser  
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 Ser Val Val Phe Cys Val Val Ser His Leu Thr Thr Gly Asn Gln Ser  
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Val Leu Cys Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr  
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Trp Glu Ile Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Lys  
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Lys Glu Thr Asn Glu Thr Lys Glu Thr Asn Cys Thr Asp Glu Arg Ile  
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Glu Val Thr Leu Phe Gln Asn Arg Asn Arg Thr Ala Val Cys Lys Ala  
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Cys Ala Thr Lys Gln Glu Tyr Trp Ser Asn Gly Thr Val Thr Val Lys  
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Ser Thr Cys His Trp Glu Val His Asn Val Ser Thr Val Thr Cys His  
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Val Pro Gly Ala Lys Lys Ile Ser Lys Ile Ile Tyr Ser Ile Tyr His

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gtg tct gta cag ata ggt aca aag gct ctg ctc tgc tgc ttt tct att 195  
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Val Gln Ile Gly Thr Lys Ala Leu Leu Cys Cys Phe Ser Ile Pro Leu  
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Thr Lys Ala Val Leu Ile Thr Trp Ile Ile Lys Leu Arg Gly Leu Pro  
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Ser Cys Thr Ile Ala Tyr Lys Val Asp Thr Lys Thr Asn Glu Thr Ser  
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Cys Leu Gly Arg Asn Ile Thr Trp Ala Ser Thr Pro Asp His Ser Pro  
100 105 110

Glu Leu Gln Ile Ser Ala Val Thr Leu Gln His Glu Gly Thr Tyr Thr  
115 120 125

Cys Glu Thr Val Thr Pro Glu Gly Asn Phe Glu Lys Asn Tyr Asp Leu  
130 135 140

Gln Val Leu Val Pro Pro Glu Val Thr Tyr Phe Pro Glu Lys Asn Arg  
145 150 155 160

Ser Ala Val Cys Glu Ala Met Ala Gly Lys Pro Ala Ala Gln Ile Ser  
165 170 175

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180 185 190

Gly Thr Val Thr Val Arg Ser Thr Cys His Trp Glu Gln Asn Asn Val  
195 200 205

Ser Asp Val Ser Cys Ile Val Ser His Leu Thr Gly Asn Gln Ser Leu  
210 215 220

Ser Ile Glu Leu Ser Arg Gly Gly Asn Gln Ser Leu Arg Pro Tyr Ile  
225 230 235 240

Pro Tyr Ile Ile Pro Ser Ile Ile Ile Leu Ile Ile Ile Gly Cys Ile  
245 250 255

Cys Leu Leu Lys Ile Ser Gly Phe Arg Lys Cys Lys Leu Pro Lys Leu  
260 265 270

Glu Ala Thr Ser Ala Ile Glu Glu Asp Glu Met Gln Pro Tyr Ala Ser  
275 280 285

Tyr Thr Glu Lys Ser Asn Pro Leu Tyr Asp Thr Val Thr Lys Val Glu  
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20 25 30  
tgc cct cct att gca tta aga aat ttg atc ata ata aca tgg gaa ata 144  
Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr Trp Glu Ile  
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Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Lys Lys Glu Thr  
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Lys Pro Ala Ala Gln Ile Ser Trp Ile Pro Glu Gly Ser Ile Leu Ala	
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Cys Pro Trp Glu Gly His Lys Ser Thr Val Thr Cys His Val Ser His	
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245 250	
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Cys Pro Trp Glu Gly His Lys Ser Thr Val Thr Cys His Val Ser His  
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aga ggc cag cct tcc tgc ata atg gcc tac aaa gta gaa aca aag gag 48  
Arg Gly Gln Pro Ser Cys Ile Met Ala Tyr Lys Val Glu Thr Lys Glu  
1 5 10 15  
acc aat gaa acc tgc ttg ggc agg aac atc acc tgg gcc tcc aca cct 96  
Thr Asn Glu Thr Cys Leu Gly Arg Asn Ile Thr Trp Ala Ser Thr Pro  
20 25 30  
gac cac att cct gac ctt cag atc agt gcg gtg gcc ctc cag cat gag 144  
Asp His Ile Pro Asp Leu Gln Ile Ser Ala Val Ala Leu Gln His Glu  
35 40 45  
ggg aat tac tta tgt gag ata aca aca cct gaa ggg aat ttc cat aaa 192  
Gly Asn Tyr Leu Cys Glu Ile Thr Thr Pro Glu Gly Asn Phe His Lys  
50 55 60  
gtc tat gac ctc caa gtg ctg gtg ccc cct gaa gta acc tac ttt ctc 240  
Val Tyr Asp Leu Gln Val Leu Val Pro Pro Glu Val Thr Tyr Phe Leu  
65 70 75 80  
ggg gaa aat aga act gca gtt tgt gag gca atg gca ggc aag cct gct 288  
Gly Glu Asn Arg Thr Ala Val Cys Glu Ala Met Ala Gly Lys Pro Ala  
85 90 95  
gca cag atc tct tgg act cca gat ggg gac tgt gtc act aag agt gag 336  
Ala Gln Ile Ser Trp Thr Pro Asp Gly Asp Cys Val Thr Lys Ser Glu  
100 105 110  
tca cac agc aat ggc act gtg act gtc agg agc act tgc cac tgg gag 384  
Ser His Ser Asn Gly Thr Val Thr Val Arg Ser Thr Cys His Trp Glu  
115 120 125  
cag aac aat gtg tct gct gtg tcc tgc att gtc tct cat tcg act ggt 432  
Gln Asn Asn Val Ser Ala Val Ser Cys Ile Val Ser His Ser Thr Gly  
130 135 140  
aat cag tct ctg tcc ata gaa ctg agt aga ggt acc acc agc acc acc 480  
Asn Gln Ser Leu Ser Ile Glu Leu Ser Arg Gly Thr Thr Ser Thr Thr  
145 150 155 160  
cct tcc ttg ctg acc att ctc tac gtg aaa atg gtc ctt ttg ggg att 528  
Pro Ser Leu Leu Thr Ile Leu Tyr Val Lys Met Val Leu Leu Gly Ile  
165 170 175

att ctt ctt aaa gtg gga ttt gct ttc ttc cag aag aga aat gtt acc 576  
 Ile Leu Leu Lys Val Gly Phe Ala Phe Phe Gln Lys Arg Asn Val Thr  
 180 185 190

aga aca tgaatatcca gatttctgga agctcattag tctgatgaca cataccagaa 632  
 Arg Thr

aacagcattt gtaatcaact ttctcattgg aatccagctt acccgtcctt gctgtcttca 692

tgtttgtag acactcacct ccaaattctt aactgagaag ggctcctgtc taaaggaaat 752

atggggacaa attgtggagc atagaccaaa agaaaggcca tccagagact gccccaccta 812

aggacccatc ccatatacag acaccaaacc cagacactac tgaagatgct gcgaagcggt 872

tgctgacagg agcctgttat agctgtctcc tgagaggctc agccagagcc tgacaaatac 932

ataggtagat gcttgcagcc aacaactgga ctgagcaaaa aatctccatt ggaggagtta 992

gagaaaggac tgaagagggt gaaagggttt gcagcccat aggaagaaca acaatatcaa 1052

ccaaccagat ctcccagagc tcccaggac taa 1085

<210> 10

<211> 194

<212> PRT

<213> mus musculus

<400> 10

Arg Gly Gln Pro Ser Cys Ile Met Ala Tyr Lys Val Glu Thr Lys Glu  
 1 5 10 15

Thr Asn Glu Thr Cys Leu Gly Arg Asn Ile Thr Trp Ala Ser Thr Pro  
 20 25 30

Asp His Ile Pro Asp Leu Gln Ile Ser Ala Val Ala Leu Gln His Glu  
 35 40 45

Gly Asn Tyr Leu Cys Glu Ile Thr Thr Pro Glu Gly Asn Phe His Lys  
 50 55 60

Val Tyr Asp Leu Gln Val Leu Val Pro Pro Glu Val Thr Tyr Phe Leu  
 65 70 75 80

Gly Glu Asn Arg Thr Ala Val Cys Glu Ala Met Ala Gly Lys Pro Ala  
 85 90 95

Ala Gln Ile Ser Trp Thr Pro Asp Gly Asp Cys Val Thr Lys Ser Glu  
 100 105 110

Ser His Ser Asn Gly Thr Val Thr Val Arg Ser Thr Cys His Trp Glu

115

120

125

Gln Asn Asn Val Ser Ala Val Ser Cys Ile Val Ser His Ser Thr Gly  
 130 135 140

Asn Gln Ser Leu Ser Ile Glu Leu Ser Arg Gly Thr Thr Ser Thr Thr  
 145 150 155 160

Pro Ser Leu Leu Thr Ile Leu Tyr Val Lys Met Val Leu Leu Gly Ile  
 165 170 175

Ile Leu Leu Lys Val Gly Phe Ala Phe Phe Gln Lys Arg Asn Val Thr  
 180 185 190

Arg Thr

<210> 11  
 <211> 1354  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (42) .. (875)  
 <223>

<400> 11  
 ggcacgagtt acgatttgtg cttaacctga ctccactcca g atg cat gct ttg ggg 56  
 Met His Ala Leu Gly  
 1 5

agg act ctg gct ttg atg tta ctc atc ttc atc act att ttg gtg cct 104  
 Arg Thr Leu Ala Leu Met Leu Leu Ile Phe Ile Thr Ile Leu Val Pro  
 10 15 20

gag tca agt tgt tca gtg aaa gga cgg gag gag atc cca ccg gat gat 152  
 Glu Ser Ser Cys Ser Val Lys Gly Arg Glu Glu Ile Pro Pro Asp Asp  
 25 30 35

tca ttt cct ttt tca gat gat aat atc ttc cct gat gga gtg ggc gtc 200  
 Ser Phe Pro Phe Ser Asp Asp Asn Ile Phe Pro Asp Gly Val Gly Val  
 40 45 50

acc atg gag att gag att atc act cca gtg tct gta cag ata ggt atc 248  
 Thr Met Glu Ile Glu Ile Ile Thr Pro Val Ser Val Gln Ile Gly Ile  
 55 60 65

aag gct cag ctt ttc tgt cat cct agt cca tca aaa gaa gca aca ctt 296  
 Lys Ala Gln Leu Phe Cys His Pro Ser Pro Lys Glu Ala Thr Leu  
 70 75 80 85

aga ata tgg gaa ata act ccc aga gac tgg cct tcc tgc aga cta ccc 344  
 Arg Ile Trp Glu Ile Thr Pro Arg Asp Trp Pro Ser Cys Arg Leu Pro



	90	95	100	
tac aga gca gag ttg cag cag atc agt aaa aaa atc tgt act gag aga				392
Tyr Arg Ala Glu Leu Gln Gln Ile Ser Lys Lys Ile Cys Thr Glu Arg	105	110	115	
gga acc act agg gtc cct gca cat cac cag agt tct gac ctt ccc atc				440
Gly Thr Thr Arg Val Pro Ala His His Gln Ser Ser Asp Leu Pro Ile	120	125	130	
aaa tca atg gcc ctc aag cat gat ggg cat tac tca tgt cgg ata gaa				488
Lys Ser Met Ala Leu Lys His Asp Gly His Tyr Ser Cys Arg Ile Glu	135	140	145	
aca aca gat ggg att ttc caa gag aga cat agc atc caa gtg cca ggg				536
Thr Thr Asp Gly Ile Phe Gln Glu Arg His Ser Ile Gln Val Pro Gly	150	155	160	165
gaa aat aga act gta gtt tgt gag gca att gca agc aag cct gct atg				584
Glu Asn Arg Thr Val Val Cys Glu Ala Ile Ala Ser Lys Pro Ala Met	170	175	180	
cag atc ttg tgg act cca gat gag gac tgt gtc act aag agt aaa tca				632
Gln Ile Leu Trp Thr Pro Asp Glu Asp Cys Val Thr Lys Ser Lys Ser	185	190	195	
cac aat gac acc atg att gtc agg agc aag tgc cac agg gag aaa aac				680
His Asn Asp Thr Met Ile Val Arg Ser Lys Cys His Arg Glu Lys Asn	200	205	210	
aat ggc cac agt gtg ttc tgc ttt atc tcc cat ttg act gat aac tgg				728
Asn Gly His Ser Val Phe Cys Phe Ile Ser His Leu Thr Asp Asn Trp	215	220	225	
att ctc tcc atg gaa cag aat cga ggt aca acc agc atc ctg cct tcc				776
Ile Leu Ser Met Glu Gln Asn Arg Gly Thr Thr Ser Ile Leu Pro Ser	230	235	240	245
ttg ctg agc att ctc tat gtg aaa ctg gct gta act gtt ctc atc gta				824
Leu Leu Ser Ile Leu Tyr Val Lys Leu Ala Val Thr Val Leu Ile Val	250	255	260	
gga ttt gct ttt ttc cag aag aga aat tat ttc aga gtg cca gaa ggc				872
Gly Phe Ala Phe Phe Gln Lys Arg Asn Tyr Phe Arg Val Pro Glu Gly	265	270	275	
tcc tgaggagagt ggtctgtggt taagatgaga ttaccacca tctgaaagac				925
Ser				
atcttgtcta ccgcgcagcg tgctgagatt ccgagaagca gccacagaac ctactaggaa				985
gacaaatctg atgtggttgt caatcctttc aatggacctg agtacttcta taaacccgag				1045
tgaggttgtg ctggacccag gagccaggct aggtcatata tgttgatttt tgctgcaaga				1105
cctcatgggtt tatctacaaa tcctaaattc tttcacttcc agtttttaaaa cttttggccc				1165
aagcattttta tccacagcat aacaccttta aagaaactct cccacggaaa ctgctggttc				1225
catggaatgg aaaattgcaa catgggtttac aagacagtgc aaaccaagca gcattccaag				1285

atatgagctt cagaaagtta caggaactgt cttgggacga gaaagaagga ttaaatagtt 1345  
 cccagtcctc 1354

<210> 12  
 <211> 278  
 <212> PRT  
 <213> Mus musculus

<400> 12

Met His Ala Leu Gly Arg Thr Leu Ala Leu Met Leu Leu Ile Phe Ile  
 1 5 10 15

Thr Ile Leu Val Pro Glu Ser Ser Cys Ser Val Lys Gly Arg Glu Glu  
 20 25 30

Ile Pro Pro Asp Asp Ser Phe Pro Phe Ser Asp Asp Asn Ile Phe Pro  
 35 40 45

Asp Gly Val Gly Val Thr Met Glu Ile Glu Ile Ile Thr Pro Val Ser  
 50 55 60

Val Gln Ile Gly Ile Lys Ala Gln Leu Phe Cys His Pro Ser Pro Ser  
 65 70 75 80

Lys Glu Ala Thr Leu Arg Ile Trp Glu Ile Thr Pro Arg Asp Trp Pro  
 85 90 95

Ser Cys Arg Leu Pro Tyr Arg Ala Glu Leu Gln Gln Ile Ser Lys Lys  
 100 105 110

Ile Cys Thr Glu Arg Gly Thr Thr Arg Val Pro Ala His His Gln Ser  
 115 120 125

Ser Asp Leu Pro Ile Lys Ser Met Ala Leu Lys His Asp Gly His Tyr  
 130 135 140

Ser Cys Arg Ile Glu Thr Thr Asp Gly Ile Phe Gln Glu Arg His Ser  
 145 150 155 160

Ile Gln Val Pro Gly Glu Asn Arg Thr Val Val Cys Glu Ala Ile Ala  
 165 170 175

Ser Lys Pro Ala Met Gln Ile Leu Trp Thr Pro Asp Glu Asp Cys Val  
 180 185 190

Thr Lys Ser Lys Ser His Asn Asp Thr Met Ile Val Arg Ser Lys Cys  
 195 200 205

His Arg Glu Lys Asn Asn Gly His Ser Val Phe Cys Phe Ile Ser His  
 210 215 220

Leu Thr Asp Asn Trp Ile Leu Ser Met Glu Gln Asn Arg Gly Thr Thr  
 225 230 235 240

Ser Ile Leu Pro Ser Leu Leu Ser Ile Leu Tyr Val Lys Leu Ala Val  
 245 250 255

Thr Val Leu Ile Val Gly Phe Ala Phe Phe Gln Lys Arg Asn Tyr Phe  
 260 265 270

Arg Val Pro Glu Gly Ser  
 275

<210> 13  
 <211> 981  
 <212> DNA  
 <213> rodent

<220>  
 <221> misc\_feature  
 <222> (1)..(981)  
 <223> n may be a, c, g, or t.

<400> 13  
 atgytntgyt tytggmgnac nwsncaygtn gcngtynytny tnathtgggg ngtnntygc 60  
 gcngarwsnw sntgyccnga yaaraaycar acnatgcara ayaaywsnws nacnatgacn 120  
 gargtnaaya cnacngtntt ygtncaratg ggnaaraarg cnytnytntg ytgyccnwsn 180  
 athwsnytna cnaargtnat hytnathacn tggacnatha cnytnmgngg ncarccnwsn 240  
 tgyathathw sntayaargc ngayacnmgn garacncayg arwsnaaytg ywsngaymgn 300  
 wsnathacnt gggcnwsnac nccngayytn gcncngayy tncarathws ngcngtngcn 360  
 ytnarcayg arggnmgnta ywsntgygay athgcngtnc cngayggnaa yttycaraay 420  
 athtaygayy tncargtnyt ngtnccnccn gargtnacnc ayttycngg ngaraaymgn 480  
 acngcngtnt gygargcnat hgcnggnaar ccngcngcnc arathwsntg gacncngay 540  
 ggngaytgyg tngcnaaraa ygarwsncay wsnaayggna cngtnacngt nmgnwsnacn 600  
 tgycaytggg arcarwsnca ygtnwsngtn gtnttytgyg tngtnwsnca yytnacnacn 660  
 ggnaaycarw snytnwsnat hgarytnggn mgngggngng aycarytnyt nggnwsntay 720  
 athcartaya thathccnws nathathath ytnathatha thggntgyat htgyytnytn 780

aarathwsng gntgymgnaa rtgyaarytn ccnaarwsng gngcnacncc ngayathgar	840
gargaygara tgcarccnta ygcnwsntay acngaraarw snaayccnyt ntaygayacn	900
gtnacnacna cngargcnca yccngcnwsn carggnaarg tnaayggnac ngaytggytn	960
acnytnwsng cnatgggnat h	981

<210> 14  
 <211> 885  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(885)  
 <223> N may be a, c, g, or t.

<400> 14	
atgytntgyc cntggmgnc ngcnaaytn ggnytnytny tnathytnac nathttytn	60
gtngcngarg cngarggngc ngcncarccn aayaaywsny tnatgytnca racnwsnaar	120
garaaycayg cnytngcnws nwsnwsnytn tgyatggayg araarcarat hacncaraay	180
taywsnaarg tnytngcnga rgtnaayacn wsntggccng tnaaratggc nacnaaygc	240
gtnytntgyt gyccnccnat hgcnytnmgn aaytnatha thathacntg ggarathath	300
ytnmgnggnc arccnwsntg yacnaargcn tayaaraarg aracnaayga racnaargar	360
acnaaytgya cngaygarmg nathacntgg gtnwsnmgnc cngaycaraa ywsngayytn	420
carathmgna cngtngcnat hacncaygay ggntaytaym gntgyathat ggtnacncn	480
gayggnaayt tycaymgng ntaycayytn cargtnytng tnacncnga rgtnacnytn	540
ttycaraaym gnaaymgnc ngcngtntgy aargcngtng cnggnaarcc ngcngcnay	600
athwsntgga thccngargg ngaytgygc acnaarcarg artaytggs naayggnacn	660
gtnacngtna arwsnacntg ycaytgggar gtncayaayg tnwsnacngt nacntgyay	720
gtnwsncayy tnacnggnaa yaarwsnytn tayathgary tnytnccngt nccngngcn	780
aaraarathw snaarathat htaywsnath taycayccnt aytaytayta yytngaycay	840
mgnggnathc ayytngtngt ngarwsncar tgytncara arath	885

<210> 15  
 <211> 978  
 <212> DNA  
 <213> rodent

<220>  
 <221> misc\_feature  
 <222> (1)..(978)

<223> n may be a, c, g, or t.

<400> 15

atgttytgyt	tytgmggnac	nwsngcnyn	gcngtnytny	tnathtgggg	ngtnttygtn	60
gcnggnwnsw	sntgyacnga	yaaraaycar	acnacncara	ayaaywsnws	nwsnccnyn	120
acncargtna	ayacnacngt	nwsngtncar	athgggnacna	argcnynyt	ntgytgytty	180
wsnathccny	tnacnaargc	ngtnytnath	acntggatha	thaarytnmg	nggnytnccn	240
wsntgyacna	thgcntayaa	rgtngayacn	aaracnaayg	aracnwsntg	yytnggnmgn	300
aayathacnt	gggcwnsnac	nccngaycay	wsnccngary	tnacarathws	ngcngtnacn	360
ytncarcayg	arggnacnta	yacntgygar	acngtnacnc	cngarggnaa	ytytgaraar	420
aaytaygayy	tncargtnyt	ngtnccnccn	gargtnacnt	ayttyccnga	raaraaymgn	480
wsngcngtnt	gygargcnat	ggcnggnaar	ccngcngcnc	arathwsntg	gwsnccngay	540
ggngaytgyg	tnacnacnws	ngarwsncay	wsnaayggna	cngtnacngt	nmgnwsnacn	600
tgycaytggg	arcaraayaa	ygnwsngay	gtnwsntgya	thgtnwsnca	yytnacnggn	660
aaycarwsny	tnwsnathga	rytnwsnmgn	ggnggnaayc	arwsnytnmg	nccntayath	720
ccntayatha	thccnwsnat	hathathytn	athathathg	gntgyathtg	yytnytnaar	780
athwsnggnt	tymgnaartg	yaarytnccn	aarytngarg	cnacnwsngc	nathgargar	840
gaygaratgc	arccntaygc	nwsntayacn	garaarwsna	ayccnytna	ygayacngtn	900
acnaargtng	argcnttycc	ngtnwsncar	ggngargtna	ayggnacnga	ytgyytnacn	960
ytnwsngcna	thgggnath					978

<210> 16

<211> 750

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (1)..(750)

<223> N may be a, c, g, or t.

<400> 16

atgggnggna	arcaratgac	ncaraaytay	wsnacnatht	tygcngargg	naayathwsn	60
carccngtny	tnatggayat	haaygcngtn	ytntgytgyc	cncnathgc	nytnmgnaay	120
ytnathatha	thacntggga	rathathytn	mgnggncarc	cnwsntgyac	naargcntay	180
aaraargara	cnaaygarac	naargaracn	aaytgyacng	tngarmgnat	hacntgggtn	240
wsnmgnccng	aycaraayws	ngayytncar	athmgncng	tngayacnac	ncaygayggn	300

taytaymgng gnathgtngt nacnccngay ggnaayttyc aymgnggnta ycayytncar	360
gtnytngtna cncngargt naayytntty carwsnmgna ayathacngc ngntngyaar	420
gcngtnacng gnaarccngc ngcncarath wsntggathc cngarggnws nathytngcn	480
acnaarcarg artaytgggg naaygggnacn gtnacngtna arwsnacntg yccntgggar	540
ggncayaarw snacngtnac ntgycaytgn wsncayytna cnggnaayaa rwsnytnwsn	600
gtnaarytna aywsnggnyt nmgnacnwsn ggnwsnccng cnytnwsnyt nytnathath	660
ytntaygtna arytnwsnyt nttygtngtn athytngtna cnacnggntt ygtnttytty	720
carmgnatha aycaygtnmg naargtnytn	750

<210> 17  
 <211> 582  
 <212> DNA  
 <213> rodent

<220>  
 <221> misc\_feature  
 <222> (1)..(582)  
 <223> n may be a, c, g, or t.

<400> 17	
mgnggncarc cnwsntgyat hatggcntay aargtngara cnaargarac naaygaracn	60
tgyytnggnm gnaayathac ntgggcnwsn acnccngayc ayathccnga yytnicarath	120
wsngcngtng cnytnarca ygarggnaay tayytntgyg arathacnac nccngarggn	180
aayttycaya argtntayga yytncargtn ytngtnccnc cngargtnac ntayttyytn	240
ggngaraaym gnacngcngt ntgygargcn atggcnggna arccngcngc ncarathwsn	300
tggacnccng ayggngaytg ygtnacnaar wsngarwsnc aywsnaaygg nacngtnacn	360
gtnmgnwsna cntgycaytg ggarcaraay aaygtnwsng cngtnwsntg yathgtnwsn	420
caywsnacng gnaaycarws nytnwsnath garytnwsnm gnggnacnac nwsnacnacn	480
ccnwsnytny tnacnathyt ntaygtnaar atggtnytny tnggnathat hytnytnaar	540
gtnggnttyg cnttyttyca raarmgnaay gtnacnmgna cn	582

<210> 18  
 <211> 834  
 <212> DNA  
 <213> rodent

<220>  
 <221> misc\_feature  
 <222> (1)..(834)  
 <223> n may be a, t, g, or c.

<400> 18  
atgcaygcny tnggnmgnac nytngcnyn atgytnyt na thttyathac nathytngtn 60  
ccngarwsnw sntgywsngt naarggnmgn gargarathc cncngayga ywsnttyccn 120  
ttywsngayg ayaayathtt yccngayggn gtngngngtna cnatggarat hgarathath 180  
acnccngtnw sngtncarat hggnaathaar gcncarytnt tytgycaycc nwsnccnwsn 240  
aargargcna cnytnmgnat htgggarath acnccnmngn aytggccnws ntgymgnytn 300  
ccntaymgng cngarytnca rcarathwsn aaraaratht gyacngarmg nggnacnacn 360  
mgngtncng cncaycayca rwsnwsngay ytnccnatha arwsnatggc nytnaarcay 420  
gayggncayt aywsntgyng nathgaracn acngayggn a thttycarga rmgncaysn 480  
athcargtnc cngngaraa ymgnaengtn gtntgygarg cnathgcnws naarcngcn 540  
atgcarathy tntggacncc ngaygargay tgygtnacna arwsnaarws ncayaaygay 600  
acnatgathg tnmgnwsnaa rtgycaymgn garaaraaya ayggncayws ngntnttytgy 660  
ttyathwsnc ayytnacnga yaaytgath ytnwsnatgg arcaraaymg nggnacnacn 720  
wsnathytn cwnsnytnyt nwsnathytn taygtnaary tngcngtnac ngtnytnath 780  
gtnggnttyg cnttyttyca raarmgnaay taytymgng tncngargg nwsn 834

<210> 19  
<211> 1047  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(1044)  
<223>

<400> 19  
atg ctc tgc cct tgg aga act gct aac cta ggg cta ctg ttg att ttg 48  
Met Leu Cys Pro Trp Arg Thr Ala Asn Leu Gly Leu Leu Leu Ile Leu  
1 5 10 15  
act atc ttc tta gtg gcc gaa gcg gag ggt gct gct caa cca aac aac 96  
Thr Ile Phe Leu Val Ala Glu Ala Glu Gly Ala Ala Gln Pro Asn Asn  
20 25 30  
tca tta atg ctg caa act agc aag gag aat cat gct tta gct tca agc 144  
Ser Leu Met Leu Gln Thr Ser Lys Glu Asn His Ala Leu Ala Ser Ser  
35 40 45  
agt tta tgt atg gat gaa aaa cag att aca cag aac tac tcg aaa gta 192  
Ser Leu Cys Met Asp Glu Lys Gln Ile Thr Gln Asn Tyr Ser Lys Val  
50 55 60  
ctc gca gaa gtt aac act tca tgg cct gta aag atg gct aca aat gct 240  
Leu Ala Glu Val Asn Thr Ser Trp Pro Val Lys Met Ala Thr Asn Ala  
65 70 75 80

gtg ctt tgt tgc cct cct atc gca tta aga aat ttg atc ata ata aca	288
Val Leu Cys Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr	
85 90 95	
tggtgg gaa ata atc ctg aga ggc cag cct tcc tgc aca aaa gcc tac agg	336
Trp Glu Ile Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Arg	
100 105 110	
aaa gaa aca aat gag acc aag gaa acc aac tgt act gat gag aga ata	384
Lys Glu Thr Asn Glu Thr Lys Glu Thr Asn Cys Thr Asp Glu Arg Ile	
115 120 125	
acc tgg gtc tcc aga cct gat cag aat tcg gac ctt cag att cgt cca	432
Thr Trp Val Ser Arg Pro Asp Gln Asn Ser Asp Leu Gln Ile Arg Pro	
130 135 140	
gtg gcc atc act cat gac ggg tat tac aga tgc ata atg gta aca cct	480
Val Ala Ile Thr His Asp Gly Tyr Tyr Arg Cys Ile Met Val Thr Pro	
145 150 155 160	
gat ggg aat ttc cat cgt gga tat cac ctc caa gtg tta gtt aca cct	528
Asp Gly Asn Phe His Arg Gly Tyr His Leu Gln Val Leu Val Thr Pro	
165 170 175	
gaa gtg acc ctg ttt caa aac agg aat aga act gca gta tgc aag gca	576
Glu Val Thr Leu Phe Gln Asn Arg Asn Arg Thr Ala Val Cys Lys Ala	
180 185 190	
gtt gca ggg aag cca gct gcg cag atc tcc tgg atc cca gag ggc gat	624
Val Ala Gly Lys Pro Ala Ala Gln Ile Ser Trp Ile Pro Glu Gly Asp	
195 200 205	
tgt gcc act aag caa gaa tac tgg agc aat ggc aca gtg act gtt aag	672
Cys Ala Thr Lys Gln Glu Tyr Trp Ser Asn Gly Thr Val Thr Val Lys	
210 215 220	
agt aca tgc cac tgg gag gtc cac aat gtg tct acc gtg acc tgc cac	720
Ser Thr Cys His Trp Glu Val His Asn Val Ser Thr Val Thr Cys His	
225 230 235 240	
gtc tcc cat ttg act ggc aac aag agt ctg tac ata gag cta ctt cct	768
Val Ser His Leu Thr Gly Asn Lys Ser Leu Tyr Ile Glu Leu Leu Pro	
245 250 255	
gtt cca ggt gcc aaa aaa tca gca aaa tta tat att cca tat atc atc	816
Val Pro Gly Ala Lys Lys Ser Ala Lys Leu Tyr Ile Pro Tyr Ile Ile	
260 265 270	
ctt act att att att ttg acc atc gtg gga ttc att tgg ttg ttg aaa	864
Leu Thr Ile Ile Ile Leu Thr Ile Val Gly Phe Ile Trp Leu Leu Lys	
275 280 285	
gtc aat ggc tgc aga aaa tat aaa ttg aat aaa aca gaa tct act cca	912
Val Asn Gly Cys Arg Lys Tyr Lys Leu Asn Lys Thr Glu Ser Thr Pro	
290 295 300	
gtt gtt gag gag gat gaa atg cag ccc tat gcc agc tac aca gag aag	960
Val Val Glu Glu Asp Glu Met Gln Pro Tyr Ala Ser Tyr Thr Glu Lys	
305 310 315 320	



aac aat cct ctc tat gat act aca aac aag gtg aag gca tct cag gca 1008  
 Asn Asn Pro Leu Tyr Asp Thr Thr Asn Lys Val Lys Ala Ser Gln Ala  
 325 330 335

tta caa agt gaa gtt gac aca gac ctc cat act tta taa 1047  
 Leu Gln Ser Glu Val Asp Thr Asp Leu His Thr Leu  
 340 345

<210> 20  
 <211> 348  
 <212> PRT  
 <213> Homo sapiens

<400> 20

Met Leu Cys Pro Trp Arg Thr Ala Asn Leu Gly Leu Leu Leu Ile Leu  
 1 5 10 15

Thr Ile Phe Leu Val Ala Glu Ala Glu Gly Ala Ala Gln Pro Asn Asn  
 20 25 30

Ser Leu Met Leu Gln Thr Ser Lys Glu Asn His Ala Leu Ala Ser Ser  
 35 40 45

Ser Leu Cys Met Asp Glu Lys Gln Ile Thr Gln Asn Tyr Ser Lys Val  
 50 55 60

Leu Ala Glu Val Asn Thr Ser Trp Pro Val Lys Met Ala Thr Asn Ala  
 65 70 75 80

Val Leu Cys Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr  
 85 90 95

Trp Glu Ile Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Arg  
 100 105 110

Lys Glu Thr Asn Glu Thr Lys Glu Thr Asn Cys Thr Asp Glu Arg Ile  
 115 120 125

Thr Trp Val Ser Arg Pro Asp Gln Asn Ser Asp Leu Gln Ile Arg Pro  
 130 135 140

Val Ala Ile Thr His Asp Gly Tyr Tyr Arg Cys Ile Met Val Thr Pro  
 145 150 155 160

Asp Gly Asn Phe His Arg Gly Tyr His Leu Gln Val Leu Val Thr Pro  
 165 170 175

Glu Val Thr Leu Phe Gln Asn Arg Asn Arg Thr Ala Val Cys Lys Ala

180	185	190
Val Ala Gly Lys Pro Ala Ala Gln Ile Ser Trp Ile Pro Glu Gly Asp 195 200 205		
Cys Ala Thr Lys Gln Glu Tyr Trp Ser Asn Gly Thr Val Thr Val Lys 210 215 220		
Ser Thr Cys His Trp Glu Val His Asn Val Ser Thr Val Thr Cys His 225 230 235 240		
Val Ser His Leu Thr Gly Asn Lys Ser Leu Tyr Ile Glu Leu Leu Pro 245 250 255		
Val Pro Gly Ala Lys Lys Ser Ala Lys Leu Tyr Ile Pro Tyr Ile Ile 260 265 270		
Leu Thr Ile Ile Ile Leu Thr Ile Val Gly Phe Ile Trp Leu Leu Lys 275 280 285		
Val Asn Gly Cys Arg Lys Tyr Lys Leu Asn Lys Thr Glu Ser Thr Pro 290 295 300		
Val Val Glu Glu Asp Glu Met Gln Pro Tyr Ala Ser Tyr Thr Glu Lys 305 310 315 320		
Asn Asn Pro Leu Tyr Asp Thr Thr Asn Lys Val Lys Ala Ser Gln Ala 325 330 335		
Leu Gln Ser Glu Val Asp Thr Asp Leu His Thr Leu 340 345		

<210> 21  
 <211> 1044  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)..(1044)  
 <223> n may be a, t, g, or c.

<400> 21 atgytntgyc cntggmgnc ngcnaaytn ggnytnytny tnathytnac nathttytn	60
gtngcngarg cngarggngc ngcncarccn aayaaywsny tnatgytnca racnwsnaar	120
garaaycayg cnytngcnws nwsnwsnytn tgyatggayg araarcarat hacncaraay	180

taywsnaarg tnytnngcnga rgtñaayacn wsntggccng tnaaratggc nacnaaygc	240
gtnytnntgyt gyccnccnat hgcnytnmgn aayytnatha thathacntg ggarathath	300
ytnmgnggnc arccnwsntg yacnaargcn taymgnaarg aracnaayga racnaargar	360
acnaaytgga cngaygarmg nathacntgg gtnwsnmgnc cngaycaraa ywsngayytn	420
carathmgnc cngtngcnat hacncaygay ggntaytaym gntgyathat ggtnacnccn	480
gayggnaayt tycaymgngg ntaycayytn cargtnytn tnacnccnga rgtnacnytn	540
ttycaraaym gnaaymgnc ngcngtntgy aargcngtng cnggnaarcc ngcngcnar	600
athwsntgga thccngargg ngaytgygcn acnaarcarg artaytggws naayggnacn	660
gtnacngtna arwsnacntg ycaytgggar gtncayaayg tnwsnacntg nacntgygay	720
gtnwsncayy tnacnggnaa yaarwsnytn tayathgary tnytnccngt nccnggngcn	780
aaraarwsng cnaarynta yathccntay athathytna cnathathat hytnacnath	840
gtnggnttya thtgytnyt naargtnaay ggntgymgna artayaaryt naayaaracn	900
garwsnacnc cngtngtnga rgargaygar atgcarcnt aygcnwsnta yacngaraar	960
aayaayccny tntaygayac nacnaayaar gtnaargcnw sncargcnyt ncarwsngar	1020
gtngayacng ayytncaayac nytn	1044

<210> 22  
 <211> 813  
 <212> DNA  
 <213> rodent

<220>  
 <221> CDS  
 <222> (1) .. (810)  
 <223>

<400> 22 atg cat gct ctg ggg agg att ccg act ttg act ttg ctg atc ttc atc Met His Ala Leu Gly Arg Ile Pro Thr Leu Thr Leu Leu Ile Phe Ile 1 5 10 15	48
aat att ttt gtg tct ggg tca agt tgt act gat gag aat caa aca ata Asn Ile Phe Val Ser Gly Ser Ser Cys Thr Asp Glu Asn Gln Thr Ile 20 25 30	96
cag aat gac agt tca tct tct ctg aca caa gtt aac act aca atg tct Gln Asn Asp Ser Ser Ser Ser Leu Thr Gln Val Asn Thr Thr Met Ser 35 40 45	144
gta cag atg gat aaa aag gct ctg ctc tgc tgc ttt tct agt cca ctg Val Gln Met Asp Lys Lys Ala Leu Leu Cys Cys Phe Ser Ser Pro Leu 50 55 60	192
ata aat gca gta tta atc aca tgg ata ata aaa cac aga cac ctg cct Ile Asn Ala Val Leu Ile Thr Trp Ile Ile Lys His Arg His Leu Pro	240

65	70	75	80		
tcc tgc aca ata gca tac aac cta gat aaa aag acc aat gaa acc agc	Ala Tyr Asn Leu Asp Lys Lys Thr Asn Glu Thr Ser	85	90	95	288
tgc ttg ggc agg aac atc acc tgg gcc tcc aca cct gac cac agt cct	Cys Leu Gly Arg Asn Ile Thr Trp Ala Ser Thr Pro Asp His Ser Pro	100	105	110	336
gaa ctt cag atc agt gca gtg gcc ctc cag cat gag ggg act tac aca	Glu Leu Gln Ile Ser Ala Val Ala Leu Gln His Glu Gly Thr Tyr Thr	115	120	125	384
tgt gag ata gta aca cct gaa ggg aat tta gaa aaa gtc tat gac ctc	Cys Glu Ile Val Thr Pro Glu Gly Asn Leu Glu Lys Val Tyr Asp Leu	130	135	140	432
caa gtg ctg gtg ccc cct gag gta acc tac ttt cca ggg aaa aac aga	Gln Val Leu Val Pro Pro Glu Val Thr Tyr Phe Pro Gly Lys Asn Arg	145	150	155	480
act gca gtc tgt gag gca atg gca ggc aag cct gct gca cag atc tct	Thr Ala Val Cys Glu Ala Met Ala Gly Lys Pro Ala Ala Gln Ile Ser	165	170	175	528
tgg act cca gat ggg gac tgt gtc act aag agt gag tca cac agc aat	Trp Thr Pro Asp Gly Asp Cys Val Thr Lys Ser Glu Ser His Ser Asn	180	185	190	576
ggc act gtg act gtc agg agc acg tgc cac tgg gag cag aac aat gtg	Gly Thr Val Thr Val Arg Ser Thr Cys His Trp Glu Gln Asn Asn Val	195	200	205	624
tct gtt gtg tcc tgc tta gtc tct cat tcg act ggt aat cag tct ctg	Ser Val Val Ser Cys Leu Val Ser His Ser Thr Gly Asn Gln Ser Leu	210	215	220	672
tcc ata gaa ctg agt caa ggt aca atg acc acc ccc cgt tcc ttg ctg	Ser Ile Glu Leu Ser Gln Gly Thr Met Thr Thr Pro Arg Ser Leu Leu	225	230	235	720
acc att ctc tat gtg aaa atg gcc ctt ttg gtg att att ctt ctt aac	Thr Ile Leu Tyr Val Lys Met Ala Leu Leu Val Ile Ile Leu Leu Asn	245	250	255	768
gta gga ttt gct ttc ttc cag aag aga aat ttt gcc aga aca tga	Val Gly Phe Ala Phe Phe Gln Lys Arg Asn Phe Ala Arg Thr	260	265	270	813

<210> 23  
 <211> 270  
 <212> PRT  
 <213> rodent

<400> 23

Met His Ala Leu Gly Arg Ile Pro Thr Leu Thr Leu Leu Ile Phe Ile	1	5	10	15
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Asn Ile Phe Val Ser Gly Ser Ser Cys Thr Asp Glu Asn Gln Thr Ile  
20 25 30

Gln Asn Asp Ser Ser Ser Ser Leu Thr Gln Val Asn Thr Thr Met Ser  
35 40 45

Val Gln Met Asp Lys Lys Ala Leu Leu Cys Cys Phe Ser Ser Pro Leu  
50 55 60

Ile Asn Ala Val Leu Ile Thr Trp Ile Ile Lys His Arg His Leu Pro  
65 70 75 80

Ser Cys Thr Ile Ala Tyr Asn Leu Asp Lys Lys Thr Asn Glu Thr Ser  
85 90 95

Cys Leu Gly Arg Asn Ile Thr Trp Ala Ser Thr Pro Asp His Ser Pro  
100 105 110

Glu Leu Gln Ile Ser Ala Val Ala Leu Gln His Glu Gly Thr Tyr Thr  
115 120 125

Cys Glu Ile Val Thr Pro Glu Gly Asn Leu Glu Lys Val Tyr Asp Leu  
130 135 140

Gln Val Leu Val Pro Pro Glu Val Thr Tyr Phe Pro Gly Lys Asn Arg  
145 150 155 160

Thr Ala Val Cys Glu Ala Met Ala Gly Lys Pro Ala Ala Gln Ile Ser  
165 170 175

Trp Thr Pro Asp Gly Asp Cys Val Thr Lys Ser Glu Ser His Ser Asn  
180 185 190

Gly Thr Val Thr Val Arg Ser Thr Cys His Trp Glu Gln Asn Asn Val  
195 200 205

Ser Val Val Ser Cys Leu Val Ser His Ser Thr Gly Asn Gln Ser Leu  
210 215 220

Ser Ile Glu Leu Ser Gln Gly Thr Met Thr Thr Pro Arg Ser Leu Leu  
225 230 235 240

Thr Ile Leu Tyr Val Lys Met Ala Leu Leu Val Ile Ile Leu Leu Asn  
245 250 255

Val Gly Phe Ala Phe Phe Gln Lys Arg Asn Phe Ala Arg Thr  
 260 265 270

<210> 24  
 <211> 810  
 <212> DNA  
 <213> rodent

<220>  
 <221> misc\_feature  
 <222> (1)..(810)  
 <223> n may be a, t, g, or c.

<400> 24  
 atgcaygcny tnggnmgnat hccnacnytn acnytnytna thttyathaa yathttygtn 60  
 wsnngnwnsw sntgyacnga ygaraaycar acnathcara aygaywsnws nwsnwsnytn 120  
 acncargtna ayacnacnat gwsngtncar atggayaara argcnytnyt ntgytgytty 180  
 wsnwsnccny tnathaaygc ngtnytnath acntggatha thaarcaymg ncayytnccn 240  
 wsntgyacna thgcntayaa yytngayaar aaracnaayg aracnwsntg yytnggnmgn 300  
 aayathacnt gggcnwsnac nccngaycay wsncngary tncarathws ngcngtngcn 360  
 ytnarcayg arggnacnta yacntgygar athgtnacnc cngarggnaa yytngaraar 420  
 gtntaygayy tncargtnyt ngtnccnccn gargtnacnt ayttccngg naaraaymgn 480  
 acngcngtnt gygargcnat ggcnngnaar ccngcngcnc arathwsntg gacnccngay 540  
 ggngaytgyg tnacnaarws ngarwsncay wsnaayggna cngtnacngt nmgnwsnacn 600  
 tgycaytggg arcaraayaa ygtnwsngtn gtnwsntgyy tngtnwsnca ywsnacnggn 660  
 aaycarwsny tnwsnathga rytnwsncar ggnacnatga cnacnccnmg nwsnytnytn 720  
 acnathytn aygtnaarat ggcnnytnytn gtnathathy tnytnaaygt nggnttygcn 780  
 ttyttycara armgnaaytt ygcnmgnacn 810